

CLAIMS

1. A method of production of objects from thermosetting resin comprising following stages:

5 a- preparing a formulation based on thermosetting materials;
b- recovering and optionally storing the prepared formulation; and
c- producing finished objects by processing of the product obtained in b step (b) by the processing techniques that are usually restricted to thermoplastics.

10 2. The method as claimed in claim 1, wherein a formulation is prepared by extrusion, calendering or dissolution in a reactor, said formulation comprising:

- from 1 to 80 wt.% of the total weight of the formulation, of a rheology-regulating agent (I) comprising at least one block copolymer selected from the S-B-M, B-M and M-B-M block copolymers in which:

15 • each block is joined to the next by a covalent bond or by an intermediate molecule joined to one of the blocks by a covalent bond and to the other block by another covalent bond,
• M is a homopolymeric PMMA or a copolymer comprising at least 50 wt.% of methyl methacrylate,
• B is incompatible with the thermosetting resin and with block M and its glass transition temperature Tg is below the service temperature of the thermoset,
• S is incompatible with the thermosetting resin, block B and block M and its Tg or its melting point Tm is above the Tg of B,
- from 20 to 99 wt.% of the total weight of the formulation, of at least one thermosetting material (II),
- from 0 to 50 wt.% of the total weight of the formulation, of at least one thermoplastic material (III),

20 wherein the formulation can ~~additionally contain~~ optionally comprise organic and inorganic fillers ~~such as~~ selected from the group consisting of fibers, pigments, UV absorbers ~~and/or~~ and fillers for improving fire resistance.

3. The method as claimed in claim 2, wherein in the course of stage (a) the thermosetting material (II) is mixed with the agent (I) in processing conditions with slow reaction kinetics of (II), then in a second stage in which reaction is initiated by raising the temperature or
5 by any other means.

4. The method as claimed in claim 2 wherein the M blocks of the block copolymers comprise PMMA that is at least 60% syndiotactic.

10 5. The method as claimed in claim 2, wherein the M blocks of the block copolymers comprise reactive one or more monomers, selected from the group consisting of glycidyl methacrylate, tert-butyl methacrylate and acrylic acid.

15 6. The method as claimed in claim 2, wherein the Tg of the B blocks of the block copolymers is below 0°C.

7. The method as claimed in claim 2, wherein the B blocks of the block copolymers are mainly comprised of polybutadiene-1,4.

20 8. The method as claimed in claim 2, wherein the dienes of the B block are hydrogenated.

9. The method as claimed in claim 2, wherein the B block comprises poly(butyl acrylate).

25 10. The method as claimed in claim 2, wherein the Tg or the Tm of S is above 23°C.

11. The method as claimed in claim 2, wherein S is polystyrene.

30 12. The method as claimed in claim 2, wherein the number-average molecular weight of

the block copolymers is between 10000 g/mol and 500000 g/mol.

13. The method as claimed in claim 2, wherein the number-average molecular weight of the block copolymers is between 20000 g/mol and 200000 g/mol.

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14. The method as claimed in claim 2, wherein the proportion of agent (I) is from 1 to 35% for respectively 99 to 65% of (II).

10 15. The method as claimed in claim 2, wherein the regulating agent (I) comprises at least one of the block copolymers M-B-M, S-B-M and at least one polymer selected from core-shells (A), functionalized elastomers, S-B block copolymers and ATBN or CTBN reactive rubbers.

15 16. The method as claimed in claim 2, wherein the B of the S-B diblock is selected from the group consisting of polybutadiene-1,4, dienes that are hydrogenated, and poly(butyl acrylate), and the S of the S-B diblock is selected from the group consisting of an S having a Tg or a Tm of above 23°C, and polystyrene.

20 17. The method as claimed in claim 16, wherein the S-B diblock has a number-average molecular weight between 10000 g/mol and 500000 g/mol.

18. The method as claimed in claim 2, wherein the impact modifier comprises at least one S-B-M block copolymer and at least one S-B block copolymer.

25 19. The method as claimed in claim 2, wherein the impact modifier comprises at least one S-B-M block copolymer and at least one core-shell polymer (A).

20. The method as claimed in claim 2, wherein the impact modifier comprises at least one S-B-M block copolymer, at least one ATBN or CTBN reactive rubber and optionally an S-B block copolymer.

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21. The method as claimed in claim 2, wherein all or part of the S-B-M triblock is replaced with an M-S-B-S-M or M-B-S-B-M pentablock.

22. The method as claimed in claim 2, wherein the thermosetting resin is a thermosetting 5 epoxy resin and a hardener.

23. The method as claimed in claim 1, wherein the product obtained in b is in the form of granules.

10 24. The method as claimed in claim 23, wherein the granules are stored without time limitation.

25. The method as claimed in claim 1, wherein the product obtained in b is in the form of sheet.

15 26. The method as claimed in claim 1, wherein the product obtained in b is in the form of film.

27. The method as claimed in claim 27, wherein the sheet or film is stored without time 20 limitation at a temperature below 0°C.

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31. (canceled)

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34. (canceled)

30 35. (canceled)

36. A finished object, produced by the method of claim 1 comprising a tube, a plate, a sheet, or a film.

37. The finished object, produced by the method of claim 1 comprising a tube for high-pressure or high-temperature applications, a plate for use in thermoforming a part for use in the automobile industry, a sheet for use in electrical or electronic applications, or a film for use in coating applications.